

**IN-DELTA STORAGE PROGRAM  
DRAFT WORK PLAN FOR FY 2003  
June 19, 2002**

**1. Introduction**

The objective of this work plan is to provide necessary technical information to make a decision to initiate negotiations with Delta Wetlands by July 1, 2003.

A project evaluation was conducted consistent with the CALFED ROD directive to review the Delta Wetlands (DW) Project. DWR and the US Bureau of Reclamation (Reclamation) reviewed information provided by the DW Properties Inc., including information presented in the EIS/EIR. It is recognized that any large project undergoes modifications of project features and design details throughout the various phases of development; such is the case with the DW Project.

Based on the evaluations of operations, water quality, engineering, environmental and economic issues, and engineering design review by the Independent Board of Consultants, DWR and Reclamation have concluded that the project concepts as proposed by DW are generally well planned. However, the project as proposed by DW requires modifications and additional analyses before it is appropriate to “initiate negotiation with DW owners or other appropriate landowners for acquisition of necessary property” (CALFED ROD, page 44). DWR and Reclamation propose working with DW Properties Inc. and other stakeholders to resolve the outstanding issues, more accurately estimate benefits and costs, and determine the feasibility of the DW Project as a component of the CALFED Bay-Delta Program. The Draft Summary Work Plan describes the tasks necessary to meet this objective.

**2. Project Management and Coordination**

- The Department of Water Resources is the lead agency for the feasibility evaluations and CEQA compliance. Reclamation will provide lead agency role for NEPA compliance. DWR and Reclamation will coordinate with other CALFED agencies.
- The In-Delta Storage Stakeholders Committee, Federal-State Technical Coordination Committee and four ongoing Project Investigation Teams: Operations, Water Quality, Engineering and Policy and Legal Implementation will continue to function.
- The ongoing Environmental Evaluations Team will have broader scope of environmental and regulatory compliance and will be reorganized to provide interaction with operations, water quality and engineering expertise to undertake evaluations for the EIR/EIS Process including compliance and permitting processes.
- The scope of the ongoing Economic Evaluations Team will be revised to include allocation of benefits, economic feasibility evaluations, determination of economic value of the project, sharing of costs, and financing options.

### **3. Feasibility Study Tasks**

#### **Task 1: Project Operations**

Further evaluations of potential project benefits under alternative operational priorities are necessary to determine the most viable formulations of an In-Delta Storage Project. Refined quantitative estimates of water supply benefits for south of Delta SWP and CVP exports and the Environmental Water Account (EWA) will be done with the daily CALSIM II Model. Also, we will explore storage possibilities for water transfers and banking EWA on Delta islands. All studies will be run with maximum Banks pumping capacity of 8,500 cfs.

- Develop CVPIA(b)(2)-EWA Base Model with daily Delta operations. Modify D1641 daily Delta model code to represent CVPIA(b)(2)-EWA modeling in the daily Delta operations. CVPIA(b)(2)-EWA modeling for north and south of Delta will be done with the monthly model.
- Develop In-Delta Storage CVPIA(b)(2)-EWA Model by linking with daily In-Delta Storage operations to CVPIA(b)(2)-EWA daily base model operations.
- Discuss fisheries Final Operation Criteria with fisheries agencies to determine if there is potential to improve operational flexibility and create fisheries and ecosystem benefits.
- Run Base and In-Delta Storage Operations Studies by adding CVPIA(b)(2) and EWA actions to previous D1641 studies. CALSIM II Model configuration may need revisions to include islands combinations and changes in fisheries and water quality criteria.
- Consider alternative operational scenarios and make additional modeling runs or gaming exercises to represent the fisheries Final Operations Criteria, water quality and operational flexibility objectives. Optimize year around reservoir operations with water quality rules, fisheries benefits/constraints, CVPIA, EWA and additional water supply, water banking and transfer benefits.
- Perform reiterations with the Delta Simulation Model (DSM2) runs.
- Perform In-Delta Storage Operations studies in combination with other storage programs.

#### **Task 2: Water Quality Evaluations**

Field investigations and water quality modeling studies are required to define reservoir operations to meet the drinking water quality requirements for the urban intakes. Also, in case of releases to in-Delta channels, project modifications may be necessary to deal with temperature differentials between the reservoir and Delta streams.

- Develop integrated experimental and modeling methodology to predict organic carbon and biological productivity processes including complex ecological processes that may affect plant growth and carbon export from the reservoir islands (in progress).

- Undertake additional modeling studies to evaluate project operations in conjunction with CALSIM II Model to comply with water quality requirements for DOC, chloride, temperature and disinfection by-products and also including biological productivity.

### **Task 3: Engineering Investigations**

Engineering investigations should aim at developing solutions to enhance project reliability through improved embankment design and consolidation of inlet and outlet structures. Embankment performance reliability can be improved with appropriate changes such as flatter slopes, wider crest, and possibly higher embankment. In addition, physical design of the project should be integrated with the acceptable degree of risk through risk analyses for seismic, flooding and operational events including seepage to adjacent islands.

- Define and conduct surveys, geotechnical and hydrological investigations including subsurface explorations, laboratory testing and data interpretation required for the design of embankments and proposed inlet and outlet structures.
- Integrate physical design with desirable level of protection through detailed risk analysis. Recommend desirable level of protection and appropriate factor of safety for the project.
- Based on the findings and recommendations of the risk analysis, optimize embankment sections through detailed slope stability, seismic, seepage and settlement analyses, and recommend slough-side and island-side slope configurations to achieve desired factor of safety.
- Conduct a borrow investigation in the interior of the islands, to locate suitable borrow sites. This would include subsurface exploration (i.e., borings) and laboratory testing to identify possible borrow areas and characteristics of borrow materials, and identifying dewatering issues through groundwater-level monitoring.
- Review proposed integrated facilities locations and establish hydraulic and structural design criteria for inlet and outlet structures. Undertake hydraulic analysis to optimize structure operations, sizing and components of various components, including pumping plants, gated structures, conduits and fish screens. Develop flow-rating curves for various flow conditions.
- Prepare structural designs for foundations, walls and appurtenances including fish screens. Prepare mechanical and structural design of pumping plants including pump casings, valves, low level conduits connections and space requirements for control building and appurtenances.
- Evaluate and recommend suitable construction methods, including dewatering issues for construction of perimeter embankments and integrated facilities. Evaluate sequencing of work.

- Recommend applicable unit costs for construction in the Delta, including material procuring and placement. Prepare quantities and cost estimates for selected scenarios including mitigation costs and improvements required for habitat islands. Perform sensitivity analyses as required for variations to selected scenarios including potential climate change.

#### **Task 4: Environmental Evaluations**

Environmental evaluations studies will cover land use, biological resources, hazardous materials and recreation. The environmental work will focus on the resource assessments, mitigation strategies and environmental benefits. Additional or subsequent EIR/EIS will be required due to changes to project design and operations, possibility of another biological opinion on listed endangered species identified during the new surveys, changes in resource impacts and mitigation requirements, and designation of beneficiaries.

- Undertake land use, botanical, wildlife, aquatic, cultural, recreational resources and hazardous materials assessment studies to address deficiencies identified in the “In-Delta Storage Program Draft Report on Environmental Evaluations” and to provide missing information required for the Subsequent EIR/EIS.
- Hold further discussions related to the Final Operations Criteria with USFWS, NMFS, and DFG to improve operational flexibility and create fisheries and ecosystem benefits. Based on the discussions, work with operations, engineering, and water quality staff to evaluate operational model runs to meet project restrictions and maximize yield.
- Provide liaison with the Fish Facilities Review Team and engineering design work to finalize fish screens designs.
- Evaluate water supply and water quality benefits for fish and wildlife and ecosystem improvements in the Delta as a result of implementation of new storage.
- Initiate the subsequent EIR/EIS process, including defining the project alternatives, conducting project scoping meetings, preparing the Notice of Preparation/Notice of Intent, and initiating subsequent EIR/EIS writing.

#### **Task 5: Economic Analyses**

Further Economic studies of project benefits including allocations of water supplies and storage to SWP, CVP, EWA, and transfers are required. The work will focus on economic impacts of development, economic feasibility evaluation, determination of the economic value of the project, sharing of costs by beneficiaries and review of options available for financing.

- Determine negative and positive impacts to agriculture. Also, include opportunity for crop shifting on adjacent islands for specialty crops displaced from reservoir islands. Use CALAG, the Department’s new statewide agricultural production model to produce improved agricultural benefits.

- Develop new input data for LCPSIM to produce improved Municipal and industrial (M&I) benefits based on the new urban water use values for 2020 and new input data on conservation, population projections and cost of local options.
- Identify project beneficiaries and additional project benefits. Perform benefits analysis of the yield allocated to agriculture, M&I, CVPIA and environmental water account for alternative operation scenarios.
- Conduct negotiations with potential beneficiaries to determine the quantity and cost of delivered water. Develop methodologies to share costs based on beneficiaries.
- Determine Economic Value of the Project by conducting Land and Project Appraisals. Perform contracting process including advertising a Request for Qualifications, screening and interviewing potential contractors, drafting contract, obtaining General Services approval and preparing a detailed appraisal.
- Integrate appraisal into economic analysis, review available financing options and recommend potential strategies for project financing.
- Re-evaluate benefit–cost analysis based on alternative operational priorities.

#### **Task 6. Feasibility Study Report**

- Prepare Executive Summary and detailed investigations reports. Make recommendations for subsequent EIR/EIS Process.

#### **4. Budget**

A minimum of \$2.2 million is required for the FY 02-03 to perform investigations to resolve pending issues of operations, water quality, engineering design, environmental mitigation, economic feasibility and starting the subsequent EIR/EIS process.

#### **5. Project Scheduling and Recommendations on Future Actions**

The following tentative dates are the milestones for the project. A schedule in graphical form is shown in Figure 1.

- Public Review of Draft Summary Report by June 14, 2002
- CALFED Science Board Review by July 2002
- Reformulate Year 02-03 Work Plan and start tasks in July 2002
- Completion of feasibility study (State Version) recommending a feasible project alternative by June 30, 2003
- Determine Project Beneficiaries and Project Benefits by June 2003
- Determine Economic Value of the Project
  - Conduct land and Project Appraisals by March 2003
  - Integrate appraisal into Economic Analysis by June 2003

- Initiate negotiations with appropriate landowners after feasibility is determined in July 2003
- Start of subsequent EIR/EIS Process in July, 2003 and completion by June 2004